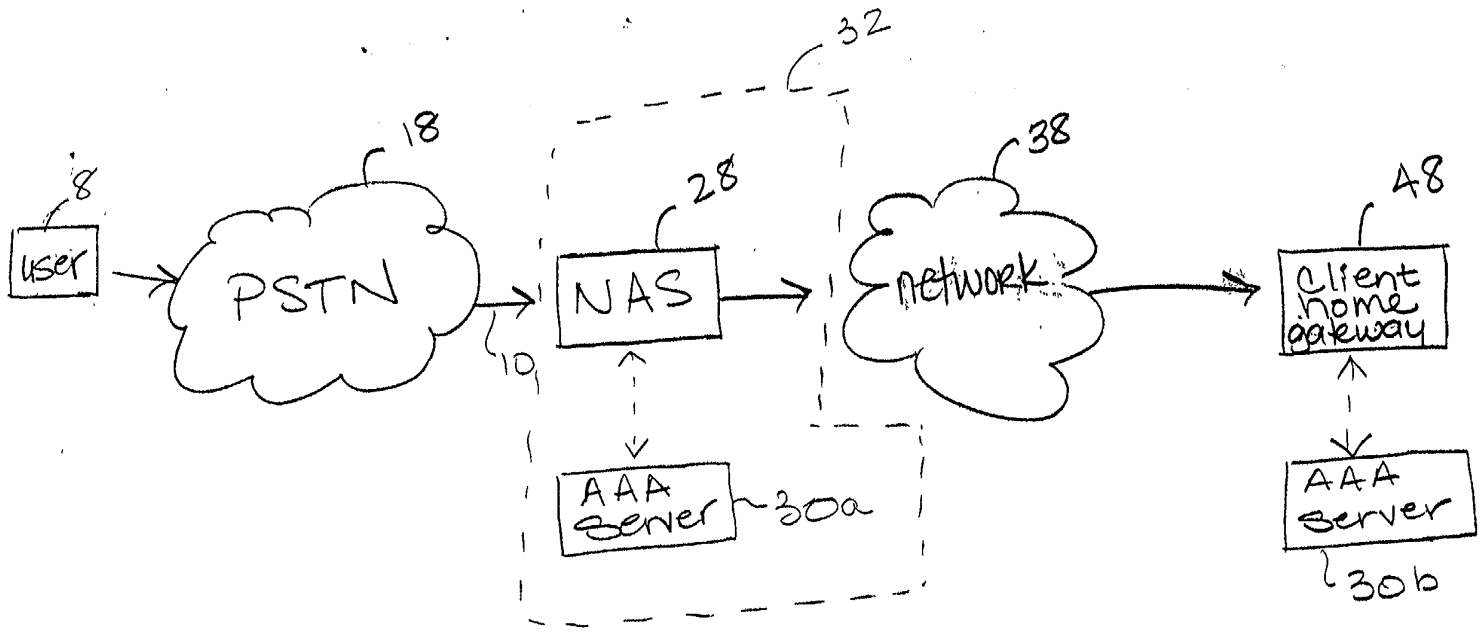

Fig. 1A (prior art)

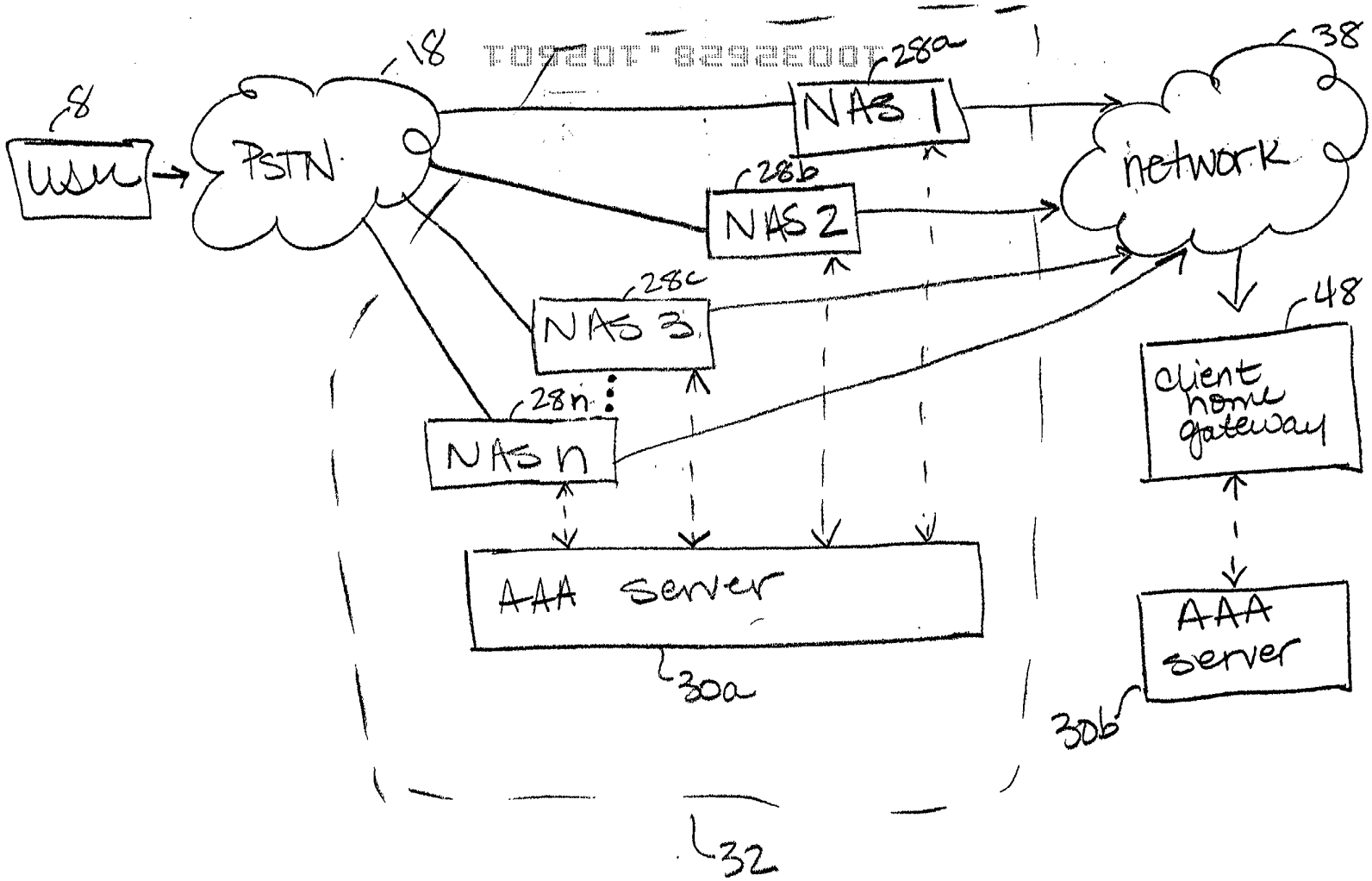

Fig. 1B (prior art)

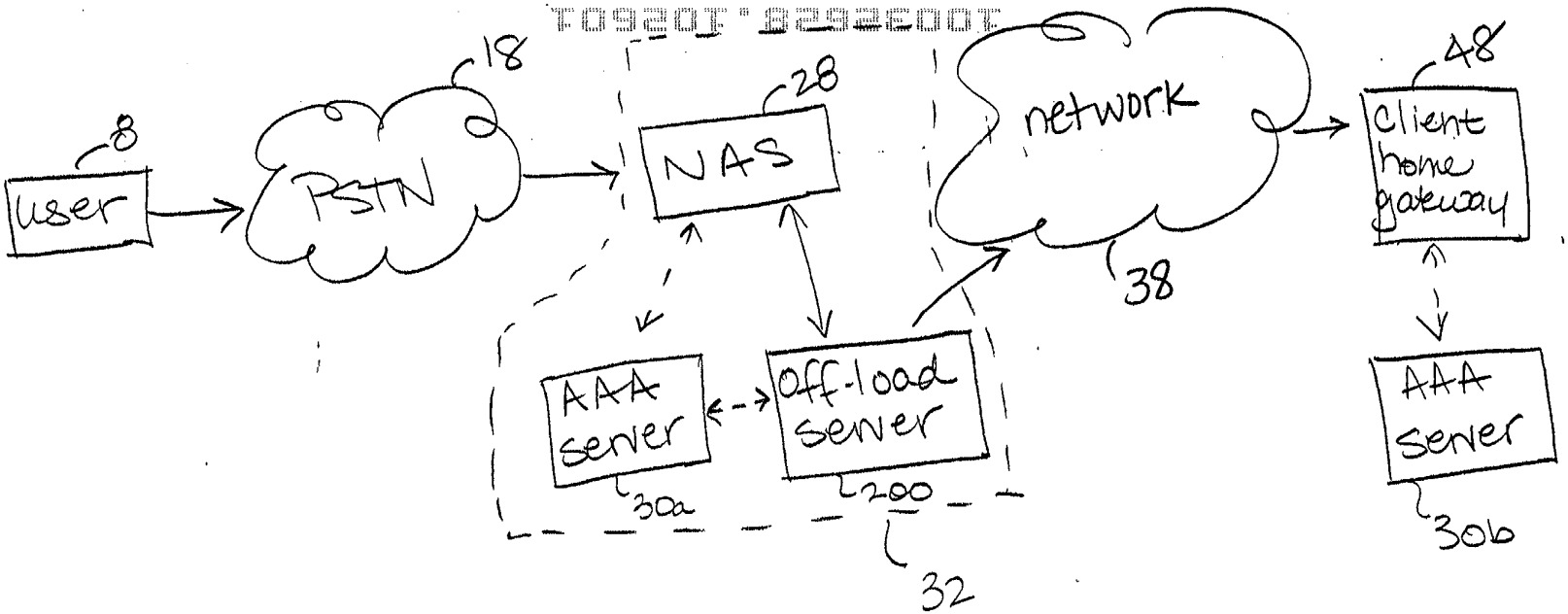
user
8
PSTN
18
NAS
28
network
38
client home gateway
48
AAA server
30a
off-load server
200
32
AAA server
30b

Fig. 2

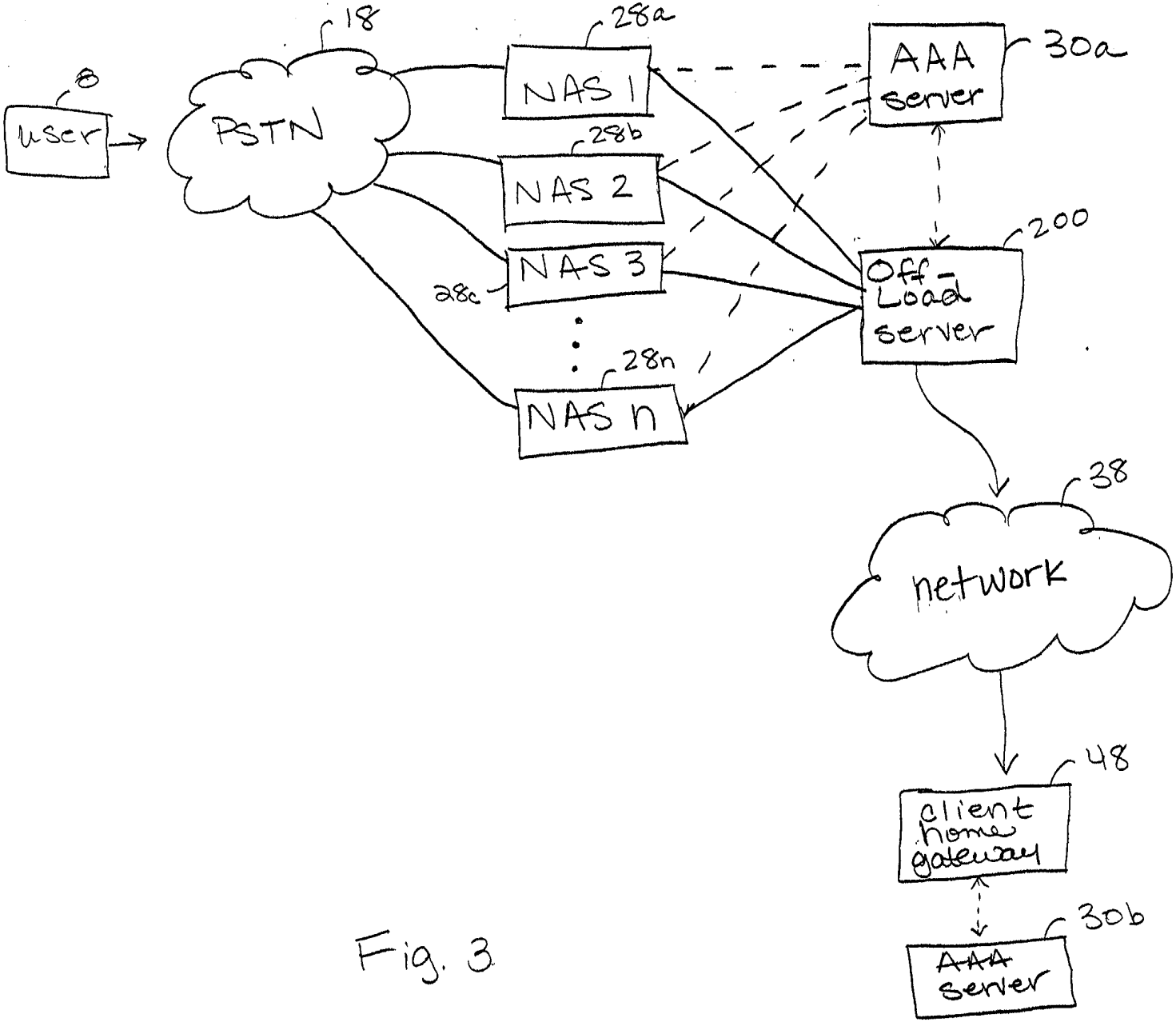

Fig. 3

CALL FLOW

NAS 1

Radius
AAA

OFF-LOAD SERVER

① Call setup - Preauth.

NAS preauthenticates the DNIS (called digits) to validate called #

Local Session Id is chosen (incrementing). (i.e., 01, 02, 03, ...)

Since more than one NAS may be involved, add a unique identifier to head of session id so that no two NAS(s) ever use the same Session Id.

So send:

12345 00000001
12345 00000002
12345 00000003

② Server looks up DNIS (username) and accepts the call.

Server may keep reference to call via Session Id to count # of users on given DNIS

accept

③ call accepted

① connects the call to NAS,
② layer and layer 2 are established.
③ VPN service starts

L2X session starts

Fig. 4A

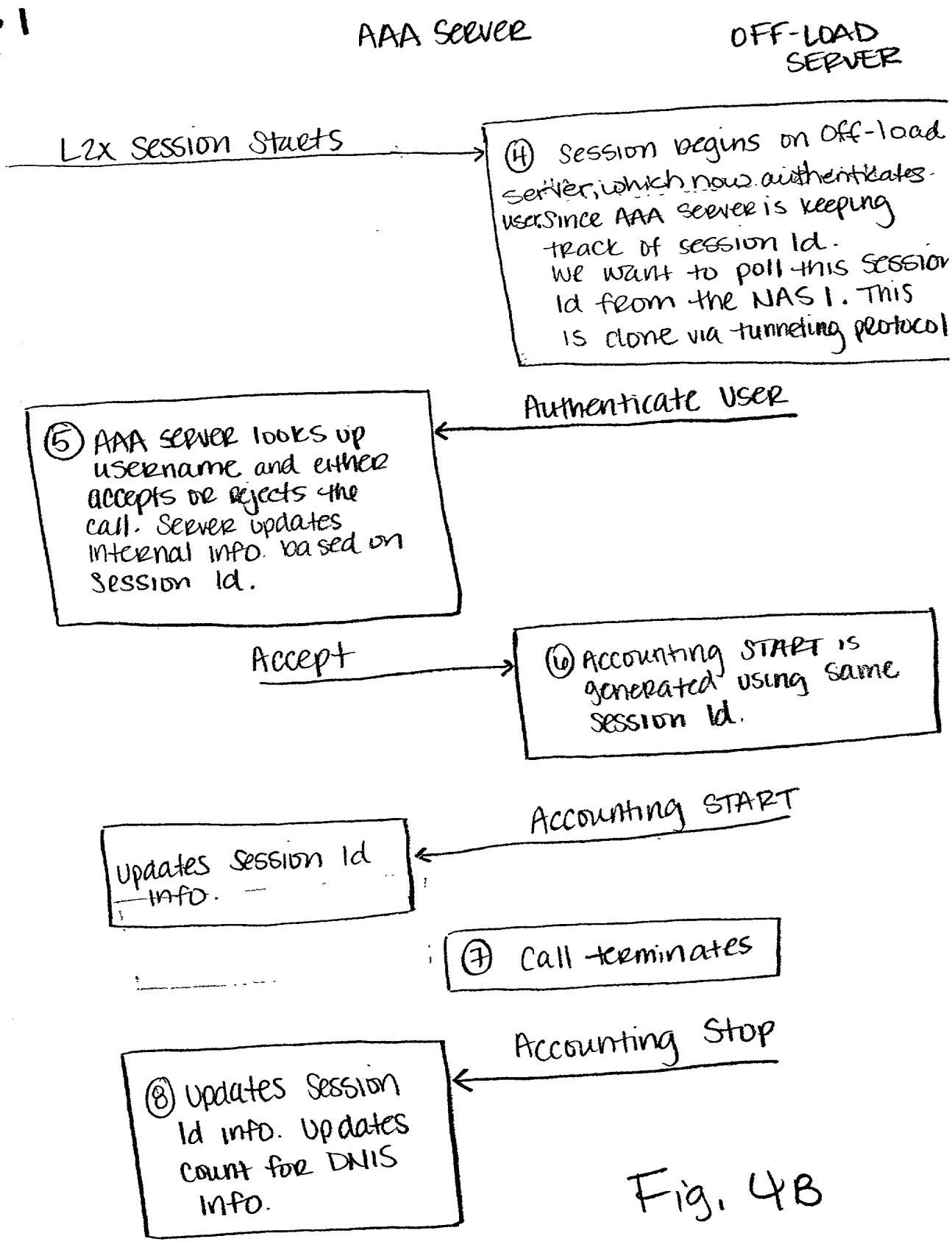
NAS 1
AAA Server
OFF-LOAD SERVER
L2x Session Starts
④ Session begins on off-load server, which now authenticates user. Since AAA server is keeping track of session Id. We want to poll this session Id from the NAS 1. This is done via tunneling protocol
Authenticate User
⑤ AAA server looks up username and either accepts or rejects the call. Server updates internal info. based on session Id.
Accept
⑥ Accounting START is generated using same session Id.
Accounting START
Updates session Id info.
⑦ Call terminates
Accounting Stop
⑧ Updates session Id info. Updates count for DNIS info.

Fig. 4B